OUTCOMES OF RING VERSUS SUTURE ANNULOPLASTY FOR TRICUSPID VALVE REPAIR IN PATIENTS UNDERGOING MITRAL VALVE SURGERY: IS THERE A DIFFERENCE?

Poster Contributions
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Session Title: Optimal Management of Tricuspid Regurgitation and Trends in the Treatment of Endocarditis
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Background: The comparative effectiveness of concomitant tricuspid valve (TV) repair using prosthetic ring- versus suture annuloplasty in patients undergoing operation for primary mitral valve (MV) disease is debated. We sought to explore factors associated with postoperative residual or recurrent tricuspid regurgitation (TR) following TV repair.

Methods: From 1995 to 2010, 479 patients (age 69.9 ± 11.1 years) underwent TV repair at the time of MV surgery (MV repair n=244, 51%). We excluded those with prior cardiac or concomitant aortic valve operations. Etiologies of MV disease were degenerative (n=260, 54%), rheumatic (n=150, 31%), and ischemic (n=69, 14%). Preoperative TR ≥3+ was present in 304 patients (63%) and NYHA class III/IV symptoms in 382 (80%); while mean right ventricular (RV) systolic pressure was 57.5 ± 19.4 mmHg. TV repair was performed using a flexible ring (n=224, 47%), rigid ring (n=35, 7%), Kay suture technique (n=28, 6%), or De Vega suture annuloplasty (n=195, 41%). Additional procedures included the Cox-Maze (n=107, 22%) and CABG (n=115, 24%). A total of 1,114 postoperative follow-up echocardiograms were analyzed. Cox regression analysis was used to identify predictors for long-term mortality and TR ≥3+ at follow-up.

Results: Overall survival was 69% at 5 years and 44% at 10 years respectively following surgery. Multivariate analysis demonstrated older age (HR1.05, p<0.001), diabetes (HR 2.04, p<0.001), preoperative RV dysfunction (HR 3.87, p<0.001), and lower EF (HR 0.98, p=0.016) to be independent predictors of late mortality. Freedom from TR ≥3+ was 98% at dismissal, 83% at 4 years, and 61% at 8 years; which was similar between ring and suture methods (p=0.07), regardless of MV disease pathology (p=0.095). Using multivariate analysis, the single independent risk factor for late TR was preoperative TR≥3+ (HR 2.21, p=0.021). TV reoperation was performed in only 5 patients; 2 - ring, 2 - De Vega, and 1 - Kay.

Conclusions: Late survival and TV durability following concomitant TV repair during mitral valve surgery are similar regardless of TV repair technique. In this series, the etiology of MV disease did not influence residual or recurrent TR.